

SURVEIN, V.B.

Pneumatic chuck without draw-in collets. Mashinostroitel' no.3:25
Mr. '61. (MIRA 17:4)

SUROVEZHIN, V.B.

Noncontact switch for feed limitation. Mashinostroitel' no.11:5
(MIRA 18:2)
N 164

VELJANOVSKA, Desanka, sanitetski vojni sluzbenik IV klase mr. ph.;
HRANILOVIC, Aleksandar, sanitetski pukovnik mr. ph.;
SUROVI, Zvonimir, sanitetski kapetan I klase mr. ph.

Some experiences in the work of military pharmacy after the
earthquake in Skoplje with special reference to the prepa-
ration and testing of parenteral solutions. Vojnosanit. pregl.
22 no.5:306-308 My '65.

СУРОВИХИН К. П.

FD-2765

USSR/Automatics and telemechanics-self-excited oscillations

Card 1/2 Pub. 10 - 10/11

Author : Surovikhin, K. P. (Moscow)

Title : Influence of coefficient of feedback amplification upon the frequency and amplitude of self-excited oscillations

Periodical : Avtom. i telem., 16, Sep-Oct 1955, 495-496

Abstract : The author considers a linear system containing internal feedback and closed through a nonlinear element, and assumes that the characteristic of the nonlinear element is single-valued and that the coefficients $W(p)$ of transmission of the system, feedback $KW(p)$ and unique odd nonlinear characteristic $f(x)$ are known. It is required to establish how the variation of the amplification coefficient of internal feedback K influences the frequency and amplitude of self-excited oscillations possible in such a system. The author notes that a similar problem relative to the action according to derivatives was considered by B. N. Naumov, "Influence of action according to derivative on frequency and amplitude of self-excited oscillations in regulation systems," Sbornik rabot po avtomatike i telemekhanike [Symposium of works on automatics and telemechanics], Acad. Sci. USSR Press, 1953. For the solution of the present problem by means of the construction of L. S. Gol'dfarb ("Certain nonlinearities in regulation systems,"

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Card 2/2

Avtom. i telem., No 5, 1947) in its ordinary form one must give various values of feedback K construct a family of frequency characteristics of the linear part of the system. Reference: A. I. Lur'ye, Nekotoryye nelineynyye zadachi teorii avtomaticheskogo regulirovaniya [Certain nonlinear problems of the theory of automatic regulation], State Technical Press, 1951.

Institution : -

Submitted : December 5, 1954

SUROVIKHIN, K.P.

Modified stream function in one-dimensional unsteady nonisentropic
flows with plane waves. Vest. Mosk. un. Ser.1: Mat., mekh. 18
no.5:50-52 S-C '63. (MIRA 16:10)

1. Moskovskiy gosudarstvennyy universitet, kafedra volnovoy i
gazovoy dinamiki.

L 18167-63 EPA(b)/EAT(1)/BDS/T-2 AFPTC/ASD Pd-1
ACCESSION NR: AP3004314 S/0055/63/000/004/0056/0063

59
58

AUTHOR: Surovikhin, K. P.

TITLE: Applications of variational methods to plane problem of gas dynamics

SOURCE: Moscow. Universitet. Vestnik. Ser. 1. Matematika, mekhanika, no. 4, 1963, 56-63

TOPIC TAGS: vortex, variational calculus, strong extremum, weak extremum, gas dynamics

ABSTRACT: The author considers the one-dimensional vortex equation of Krokko

$$\psi_{xx} \left(1 - \frac{u^2}{a^2}\right) - 2 \frac{uv}{a^2} \psi_{xy} + \psi_{yy} \left(1 - \frac{v^2}{a^2}\right) = \tag{1}$$

$$= (\Lambda^2 - 1) (1 - V^2)^{\frac{\kappa+1}{\kappa-1}} \frac{\kappa-1}{2\kappa R} \frac{dS}{d\phi}$$

and determines conditions under which this is an Euler variational equation. He

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ACCESSION NR: AP3004314

examines some of the well known necessary and sufficient conditions that the solution of (1) be an extremum of some functional with regard to their implications in the hydrodynamics as well as the geometric implications. For example, he shows that satisfaction of the Jacoby condition guarantees uniqueness of the solution in the subsonic case. Orig. art. has: 21 formulas and 1 diagram.

ASSOCIATION: Moskovskiy universiteta, kafedra volnovoy i gazovoy dinamiki
(Moscow University, Department of Wave and Gas Dynamics)

SUBMITTED: 09Mar62

DATE ACQ: 20Aug63

ENCL: 00

SUB CODE: MM

NO REF SOV: 004

OTHER: 006

Card 2/2

SUROVIKHIN, K.P.

Group classification of equations describing one-dimensional
unsteady gas flows. Dokl. AN SSSR 156 no. 3:533-536 '64.
(MIRA 17:5)

1. Predstavleno akademikom L.I.Sedovym.

L 32014-65
 ESDDP/ESDGS
 ACCESSION NR: AP4058520
 S/0020/64/156/003/0533/0536

AUTHOR: Surovikhin, K. P.

19
18
B

... equations describing one dimen-

TOPIC TAGS: one dimensional gas flow, nonstationary gas flow, group theory, hydrodynamics, group theoretic classification, gas dynamics

... equations are written in the hydraulic approach

Card 1/A

L 27378-66 EWI(d)/EWI(1)/EWP(m)/EWA(d)/EWA(1) IJP(c)
ACC NR: AP6010646 SOURCE CODE: UR/0055/65/000/006/0070/0091

27
26
B

AUTHOR: Surovikhin, K. P. (Member of wave and gas dynamics dept)

ORG: Department of Wave and Gas Dynamics, Moscow State University (Kafedra volnovoy i gazovoy dinamiki, Moskovskiy gosudarstvennyy universitet)

TITLE: External Cartan forms and derivation of the fundamental group permitted by a given system of equations

SOURCE: Moscow. Universitet. Vestnik. Seriya I. Matematika, mekhanika, no. 6, 1965, 70-81

TOPIC TAGS: group theory, partial differential equation, gas dynamics, wave propagation

ABSTRACT: Cartan's ^{1/2}method is used to investigate group properties of a system of partial differential equations describing the one-dimensional unsteady gas flow with plane waves. The governing gas dynamic equations are written in a differential Pfaffian form

$$\begin{aligned} \tilde{\omega}^1 &= du - u_x dx + \left(uu_x + \frac{p_x}{\rho} \right) dt, \\ \tilde{\omega}^2 &= dp - p_x dx + (up_x + \gamma pu_x) dt, \\ \tilde{\omega}^3 &= d\rho - \rho_x dx + (u\rho_x + \rho u_x) dt. \end{aligned}$$

2

UDC: 53.51

Card 1/2

L 27378-66

ACC NR: AP6010646

Two more Pfaffian forms are obtained relating the parameters u , p , and ρ , and are denoted by ω^1 , ω^2 . These equations are then reduced to the group representation ¹⁶

$$D\omega^i = C_{jk}^i(\omega^j \omega^k)$$

which shows that $\omega^1, \omega^2, \bar{\omega}^1, \bar{\omega}^2, \bar{\omega}^3$ appear in basic forms which are invariant and represent some 5-parameter g -group. The finite transformations of this g -group are given by

$$\bar{\rho} = \rho C_3, \quad \bar{p} = \rho \left(\frac{C_2}{C_1} \right)^{\frac{1}{\gamma}}; \quad \bar{u} = u(C_1 C_2^{\gamma-1})^{\frac{1}{2\gamma}} + C_3,$$

$$\bar{i} = t \left(\frac{C_2^{\gamma-1}}{C_1} \right)^{\frac{1}{2\gamma}} + C_4, \quad \bar{x} = x + t C_3 \left(\frac{C_2^{\gamma-1}}{C_1} \right)^{\frac{1}{2\gamma}} + C_5,$$

where

$$C_1 = C_2 = 1, \quad C_3 = C_4 = C_5 = 0.$$

As a special case, a group representation is obtained for $\gamma = 3$. Orig. art. has: 21 equations.

SUB CODE: 20, 12/SUBM DATE: 09Jan65/ ORIG REF: 003

Card 2/2 *Jo*

L 65133-65 SWT(d) IJP(e)

ACCESSION NR: AFS010740

UR/0020/65/163/002/0319/0322

AUTHOR: Lurovichin, K. P.

TRANSLATED BY: [unreadable]

SOURCE: AN SSSR. Doklady, v. 163, no. 2, 1965, 319-322

TOPIC TAGS: group theory, partial differential equation, gas flow equation

ABSTRACT: The method of exterior forms, due to E. Cartan, is applied to the study of partial differential equations over the system

$$a^i_j dx^j + a^i dx^i = 0 \quad (i, k = 1, 2, \dots, n-2), \quad (2n)$$

to have an exterior differentiation of the Pfaffian forms the system

$$da^i - b_k^i (da^k) - d_k (a^i dx^k) \quad (3n)$$

This system is written in the form

$$da^i - b_k^i (da^k) - d_k (a^i dx^k) = 0$$

where a^i are the invariants of a finite group G associated with the initial system. To illustrate the use of this method, the following system of gas

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ACCESSION NR: AP5010740

equations is considered:

$$u_x + uv_x + p_x / \rho = 0;$$

$$p_x + u p_x + \gamma p u_x = 0;$$

$$\rho_x + u \rho_x + \rho u_x = 0.$$

... to acknowledge A. H. Vasiliev's critical ... formulas.

... Moscow State University / ... Research Institute of

SUBMITTED: 30Mar64

ENCL: 00

SUB CODE: MA, ME

NO REF SOV: 005

OTHER: 001

Card 2/2

SUROVIKIN, V., vrach-fiziolog

First aid to a drowned man. Voen. znan. 41 no.6:44 Je '65. (MIRA 18:5)

1. Upravleniye morskoy podgotovki, spasatel'noy sluzhby i sporta
TSentral'nogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva
sodeystviya armii, aviatsii i sportu SSSR.

SUROVIKHIN, V.D.

N/5
671.422
.F1

Chelovek pod vodoy; ustroystvo i ispol'zovaniye vodolaznogo apparata
"Podvodnik-1" Underwater man; the arrangement and use of the Podvodnik-1"
diving apparatus, by V. G. Fadeyev, I Pechatin, A. A., i Surovikhin, V. D.
Moskva, Izd-vo Dosaaf, 1958. 129 p. illus., charts, Diagr., tables.
Bibliographical Footnotes.

SUROVIKIN, V.D., vrach-fiziolog.

Safety measures for divers. Voenn. 32 no.11:25 N '56.
(MIRA 10:10)

1. Upravleniye spasatel'noy sluzhby Tsentral'nogo komiteta
Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu.
(Diving, Submarine--Safety measures)

MAKSIMENKO, Vasilii Pavlovich. Prinimshi uchastiye: KAMENSKIY, V.K.;
SUROVIKIN, V.D., vrach-fiziolog; SHEPTEL', M.A., vrach; ZAOHEGIN,
V.N., vodolaznyy spetsialist; KUZNETSOV, I.I., vodolaznyy
spetsialist; SHTORM, V.M., vodolaznyy spetsialist; IGOSHIN, M.G.,
red.; KARYAKINA, M.S., tekhn.red.

[Manual for divers engaged in rescue work] Posobie dlia vodolaza-
spasatelja. Moskva, Izd-vo DOSAAF, 1957. 158 p. (MIRA 13:8)
(Diving, Submarine)

FADEYEV, Vladimir Georgiyevich, PECHATIN, Aleksandr Aleksandrovich, SUROVIKIN,
Vladislav Dmitriyevich, IGOSHIN, M.G., red.; ANDRIANOV, B.I., tekhn.red.;

[Underwater man; arrangement and use of the "Podvodnik-1" diving ap-
paratus] Chelovek pod vodoi; ustroistvo i ispol'zovanie vodolaznogo
apparata "Podvodnik-1". Moskva, Izd-vo DOSAAF, 1958. 149 p. (MIRA 11:9)
(Diving, Submarine)

SUROVIKIN, V., podpolkovnik med. sluzhby, vrach.

First aid to water victims. Voen. znan. 34 no.7:32-33 J1 '58.
(MIRA 11:9)

1. Upravleniye spasatel'noy sluzhby Tsentral'nogo Kometa dobrovol'nogo
obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Drowning, Restoration from)

BAGAYEV, Leonid Kuz'mich; ZAONEGIN, Vladimir Nikolayevich; SUROVIKIN,
Vladislav Dmitriyevich; KONYUSHENKO, I.A., red.; KARYAKINA,
M.S., tekhn.red.

[Oxygen diving equipment; visual aids for training in shallow
diving] Kislородnyi vodolaznyi skafandr; nagliadnoe uchebnoe
posobie dlia obucheniia legkovodolaznomu delu. Moskva, Izd-vo
DOSAAF, 1959. 24 p. (MIRA 12:11)
(Diving, Submarine--Equipment and supplies)

SUROVIKIN, V.

Follow underwater safety rules. Voen. znan. 35 no.8:26 Ag '59.
(MIRA 12:12)

1. Starshiy inspektor po meditsinskoy sluzhbe Tsentral'nogo Komiteta
Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu SSSR.
(Diving, Submarine--Safety measures)

SUROVIKIN, V.D., vrach-fiziolog

Along underwater paths, Zdorov'e 7 no.8:27 Ag '61. (MIRA 14:9)

1. Chlen prezidiuma Federatsii podvodnogo sporta SSSR.
(DIVING, SUBMARINE)

SUROVIKIN, Vladislav Dmitriyevich; BEL'CHENKO, N.I., red.

[Medical aid to victims of accidents in water] Medi-
tsinskaiia pomoshch' postradavshim na vode. Moskva, Izd-
vo "Dosaaf," 1964. 133 p. (MIRA 17:5)

SUROVNIKIN, V., vrach-lizzilog
Methods of reviving drowned people. Voen. znan. 70 no. 8: 42-43
Ag '64.
(MIRA 17:11)
1. Upravleniye morskoy podgotovki spassatel'noy sluzhby i sporta
Tsentral'nogo komiteta Vsesoyuznogo dobrovol'nogo obshchestva
nodelyatiya armii, aviatssil i flotu.

SUROVNIKIN, V.F.

Kinetics of the formation of carbon black during the turbulent
burning of liquid hydrocarbons. Kauch. i rez. 22 no.9:34-
37 S '63. (MIRA 16:11)

1. Nauchno-issledovatel'skiy konstruktorsko-tekhnologicheskoy
institut shinnoy promyshlennosti, g. Omsk.

SUROVIKIN, V.F.; POKORSKIY, Ye.Ya.

Effect of the hydrodynamic and thermal conditions of the
furnace process on the structure formation of carbon black.
Kauch. i rez. 23 no.7:42-45 J1 '64. (MIRA 17:8)

1. Nauchno-issledovatel'skiy konstruktorsko-tehnologicheskoy
institut shinnoy promyshlennosti, g. Omsk.

SHROUDS, J. W. (1971), U.S.A.

The effect of carbon black on the breakdown of hydrocarbons in a high-temperature flow of complete-combustion products. *Can. J. Chem.* 49: 544-548 (1971) (MIRA 1816)

Electrophoretic investigation of protein and its fractions in rabbit blood during development of acute purulent inflammation. M. S. Borzobaghi, M. S. Mat. In. (Moscow). Zh. Obshch. Biol. 1974, 13, No. 3, 464-468. — Acute purulent inflammation was induced by subcutaneous injection of bacteria in 21 rabbits. Laboratory animals (I) decreased and (II) increased. The Haemogram affected only the 3 fractions giving rise to a 3 fraction. Total protein remained unchanged. After 72 hrs. I decreased more and II increased more. The increase of 3-II resulted in the formation of 3-II and 3-III. Total protein was still unchanged. After 144 hrs the I was still low, the II high, and 3, and 3-II increased. Total protein was decreased. After 144 hrs I had risen although to lower than normal and II had fallen although it remained higher than normal. 3-II was close to normal. 3-III lower than after 72 hrs but still higher than normal. 3-III was still high to 144 hrs than before and total protein almost normal. After 17-17 days there was a gradual return to normal. The increased amount of 3-II during the inflammation may be regarded as a defensive mechanism. A. M.

MD

SUROVIKINA, M. S.

SUROVIKINA, M. S. -- "Data on the Influence of Acute Suppurative Inflammation on the Protein Composition of the Blood Serum." Stalinabad State Med Inst imeni Abuali ibna-Sina (Avicenna), Stalinabad, 1955 (Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya letopis', No. 37, 3 September 1955

USSR/Biology - Physiology ^{SUROVIKINA, M. S.} FD-2261

Card 1/1 Pub 17-12/20

Author : Surovikina, M. S.

Title : ~~On the mechanism of the leucocytic reaction in acute aseptic inflammation in rabbits~~
On the mechanism of the leucocytic reaction in acute aseptic inflammation in rabbits

Periodical : Byul. eksp. biol. i med. 3, 46-50, Mar 1955

Abstract : Investigated the mechanism of the leucocytic reaction observed in acute aseptic inflammation (resulting from subcutaneous injection of turpentine) in rabbits. Studied changes in white blood cell count and blood picture at given intervals of time (up to five days) after injection. Seven references; 6 USSR, all after 1940.

Institution: Chair of Pathological Physiology (Head-Prof. I. A. Oyvin) of the Stalinabad Medical Institute imeni Avitsenna (Director - Y. A. Rakhimov, Corresponding Member of the Academy of Sciences of the Tadzhik SSR)

Submitted : May 20, 1954 by V. N. Chernigovskiy, Member of the Academy of Medical Sciences USSR

SUROVIKINA, M. S.

"Changes in the Protein Content of Blood Serum in Connection With the Development of Acute Inflammation," a report presented at the First Conference of Pathologists of Central Asia and Kazakhstan held in Stalingrad, 12-15 Feb 1955, Ark. Patol., 17, No 3, pp 83-87, 1955

Abstract Sum. 1003, 20 Jul 56

SUROVIKINA, M. S.

"Rate of Removal of Separate Serum Protein Fractions From the Blood Stream," by M. S. Surovikina, Trudy Stalinabad-skogo Meditsinskogo Instituta (Works of Stalinabad Medical Institute), Vol 21, 1956, pp 33-37 (from Referativnyy Zhurnal -- Khimiya, Biologicheskaya Khimiya, No 2, 25 Jan 56, p 75, Abstract No 1757)

"In experiments on rabbits it was shown that all serum protein fractions move from the blood into the tissues at the same rate. The time required for removal of half the intravenously administered homologous protein from the blood of a rabbit is 3-4 hours." (U)

SUM.1360

SUROVIKINA, M.S.

Nature of additional globulin fractions in the blood serum of
rabbits in inflammation. Trudy.Stal.med.inst. 21:167-171 '56
(MIRA 11:8)

(BLOOD PROTEINS)
(INFLAMMATION)

SUROVIKINA, M.S.

Half life of individual serum protein fractions of proteins in the
blood stream [with summary in English] Biul. eksp. biol. i med.
43 no.2:45-47 P 157 (MLRA 10:5)

1. Iz kafedry patologicheskoy fiziologii (zaveduyushchiy-professor
I.A. Oyvin) Stalinabadskogo meditsinskogo instituta i kafedry
yestestvoznaniya i khimii (zaveduyushchiy-dotsent L.Sh. Radzhabov)
Stalinabadskogo pedagogicheskogo instituta. Predstavlena
deystvitel'nym chlenom ANU SSSR professorom A.Ye. Braunshteynom.

(BLOOD PROTEINS,

half life of individual proteins fractions in circ.
blood in rabbits) (R18)

20-1-14/54

AUTHOR SUROVIKINA, L.S.

TITLE On the Velocity of the Separation of Single Albumen Fractions of the Serum from the Blood Passage.
(Skorost' udaleniya belkovykh fraktsiy iz krovyanogo ruzla Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 1, pp 161 - 164 (U.S.S.R.)

ABSTRACTA Still a short time ago it was common belief that the plasma albumen fractions are separated through the glass wall more easily with a reduced molecular weight of the albumen. In the course of recent years this opinion became doubtful because the attempt was made to solve this problem methodically and from a different point of view. On 1954 the results of these attempts were published for the first time. Experiments were carried out with rabbits (two series) of different colors. In order to determine the velocity with which the albumen fractions of the serum "left" the blood vessels and entered the tissues two test groups (of 10 rabbits each) were formed. Statistical results are shown by a table. The statistical analysis showed that serum albumen fractions leave the blood passage with equal velocity. (2 tables).

ASSOCIATION Not Given.

PRESENTED BY

SUBMITTED

AVAILABLE Library of Congress.

Card 1/1

KUROCHKA, A.L., inzh.; ALIKIN, R.I., inzh.; SUROVIKOV, A.A., inzh. (Novocherkassk)

Using phase splitters for feeding auxiliary machinery of a.c.
electric locomotives. Elek. i tepl. tiaga 2 no.12:9-11 D '58.
(MIRA 12:1)

(Electric locomotives--Electric equipment)

ALIKIN, R.I.; GORBIYENKO, P.I.; BESHROT'VANNYY, I.G.; TRIBTSOV, P.F.;
TOLCTAPEV, P.A.; ZUSHANOVSKAYA, L.L.; IBRAGIMOV, K.G.; KOZOREZOV,
M.A.; KOKOREV, A.I.; KUPRIANOV, Yu.V.; KUROCHEA, A.L., kand.
tekh. nauk; LITVINOVA, I.M.; LOZANOVSKIY, A.L., kand. tekh.
nauk; MAVRIKOV, F.I.; MAKHAN'KOV, L.V.; PUKALOV, V.I.; RAYLYAN,
A.F.; SVERDLOV, V.Ya.; SKLYAPOV, B.S.; SOLOV'YEV, K.M., kand.
tekh. nauk; STUKALKIN, A.N.; SUROVIKOV, A.A.; TIKHONOV, N.G.;
SHTEFENKO, P.K.; YANOV, V.P.

[VİFO electric locomotive.] Electrovoz VAFO. Novocherkassk. Nauchno-
issledovatel'skii institut elektrovozostroeniia. Sbornik nauchnykh
trudov, vol. 5) (MIRA 18:5)

BURDEYNYY, P.A.; GERMANOVICH, M.V., uchitel'nitsa; SUROVIKOV, Ya.D.

Editor's mail. Geog. v shkole -26- no.1:59-61 Ja-F '63. (MIRA 16:5)

1. Srednyaya shkola No.4, g. Vinnitsy (for Burdeynyy). 2. Srednyaya shkola No19, Polotsk (for Germanovich). 3. 36-ya shkola, Gor'kiy (for Surovnikov).

(Geography--Study and teaching)

DVORETSKIY, V.R., inzh.; SUROVITSKAYA, T.S., inzh., otv. red.

[Technology of metals and structural materials; program for secondary specialized schools...] Tekhnologiya metallov i konstruktsionnye materialy; programma dlia srednikh spetsial'nykh uchebnykh zavedenii... Uтверждена 26 dekabria 1959 g. Moskva, 1960. 12 p. (MIRA 14:10)

1. Russia (1923- U.S.S.R.) Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya SSSR. Tsentral'nyy metodicheskiy kabinet po srednemu spetsial'nomu obrazovaniyu.
(Metallurgy—Study and teaching) (Building materials)

SUROVITSKIY, V.

Established prices in Penza restaurants. Obshchestv.pit.
no.8:1-2 Ag '59. (MIRA 12:12)

1. Glavnyy bukhgalter Penzenskogo tresta stolovykh.
(Penza--^Rrestaurants, lunchrooms, etc.)

BADALOV, S.T.; RABAYEVA, E.Ye.; SUROVKIN, V.M.

Comparative method for obtaining thermograms. Uzb.geol.zhur.
no.2:90-93 '59. (MIRA 12:8)

1. Institut geologii AN UzSSR i SAIGIMS.
(Rocks--Thermal properties)

SUROVKIN, V.M.

Exothermic reactions of silicon, aluminum, and iron oxides with
calcium oxide on heating. Uch.zap.SAIGIMS. no.5:219-223 '61.
(MIRA 15:11)

(Metallic oxides)

(Silicon oxide)

SUROVKIN, V.M.; KRYLOV, G.M.

Interaction of lime with naturally burnt clay ("gliezh")
during heating. Uzb.khim.zhur. 6 no.2:68-72 '62. (MIFA 15:7)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii
i mineral'nogo syr'ya i Institut khimii AN UzSSR.
(Lime) (Clay)

SUROVKIN, V.M.

Heat-resistant portland cement and concrete with a microadditive and aggregates from naturally burned clay. Biul. nauch.-tekh. inform. VIMS no.2:69-70 '63. (MIRA 18:2)

1. Sredneaziatskiy nauchno-issledovatel'skiy institut geologii i mineral'nogo syr'ya, Tashkent.

... .. SUROVY A.V.

... ..
... ..
... .. (MIRA 1818)

SUROVOV, I. I.

136-10-10/13

AUTHORS: Surovov, I.I. and Gudima, N.V.

TITLE: The Krasnoural'sk Works - The First of the Copper-Smelting Industry on the Way to the Fortieth Anniversary of the Great October Revolution (Krasnoural'skiy Zavod - pervenets medeplavil'noy promyshlennosti na puti k sorokaletiyu velikogo oktyabrya)

PERIODICAL: Tsvetnyye Metally, 1957, Nr 10, pp.63-71 (USSR)

ABSTRACT: Information is given of developments at the Krasnoural'sk works since its construction was authorized in 1928. This works, designed to smelt local rich copper-pyrites ore (over 2% copper) now works on zinc-containing imported ores and the composition of these is tabulated. The different preparatory treatments to which the different ores are subjected are outlined and important work on classification carried out by works personnel with the experimental shop and the Ural-mekhanobr organization is mentioned. Improvements suggested by Badurin and Toporov and by engineers Bayderin, Blekman, Kislyakov, Epel'man and others were advantageously introduced in 1956, and a new scheme of collective-selective flotation with stage flotation in both cycles was introduced in 1956 (Figs.1 and 2). At present the metallurgical plant receives concentrates (10-12% Cu, up to 7-8% Zn, about 40% S and

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136-10-10/13

The Krasnoural'sk Works - The First of the Copper-Smelting Industry on the Way to the Fortieth Anniversary of the Great October Revolution.

30-32% Fe) with gold-containing materials, copper-smelting returns and limestone and a flow-sheet is given in the article (Fig.3). The reverberatory-furnace practice (directed by A.P. Pankratov) at the works is treated in some detail, and reference is made to a pamphlet describing the experience of foreman A.A.Yarusov. Converter practice is also described. The following are named as having participated in improvements of practice: Surov, Sherstnev, Charnov, Pomekhonov, Postnikov, Zhdanov. Professors V.A.Vanyukov, N.P.Diyev, D.I.Lisovskiy, V.I.Smirnov and A.A.Tseydler and their pupils have participated in studies of processes at the works. Long-service and newer personnel are named. The achievements of the works in its 26 years of existence are summarised, honours bestowed on its personnel are listed and future tasks briefly considered. There are 5 figures, 1 table and 1 Slavic reference.

AVAILABLE: Library of Congress.

Card 2/2

SOV/136-58-10-6/27
AUTHORS: Surovov, I.I., Mikhaylenko, A.Ya and Tseydler, A.A.
TITLE: Material and Heat Balances for a Reverberatory Furnace at the Krasnoural'sk Copper Smelting Combine (Material'nyy i teplovoy balansy otrazhatel'noy pechi Krasnoural'skogo medeplavil'nogo kombinata)
PERIODICAL: Tsvetnyye Metally, 1958, Nr 10, pp 29 - 32 (USSR)
ABSTRACT: At the instigation of the Krasnoural'sk Combine, a team from ~~Mintsvetmetzoloto~~, including 36 students under the direction of the authors carried out measurements on a reverberatory furnace from which materials (Tables 2,3) and heat (Table 4) balances were constructed. Two periods were covered: June 15-18, 1957, when a 12.02% Cu cinder was smelted to form a rich matte and June 19-20, 1957, when an 8.49% Cu cinder was smelted to a lean matte. In the second period, the coal feed was increased and a more reducing atmosphere and incomplete combustion of the pulverised coal prevailed, because of insufficient blower capacity. The high-combustion rates and gas velocities in both periods suggest that the gas space of the furnace was insufficient; the standard fuel consumption per ton

Card 1/2

SOV/136-58-10-6/27

Material and Heat Balances for a Reverberatory Furnace at the
Krasnoural'sk Copper Smelting Combine

cinder was practically identical but in the second heat losses were greater (18.7 instead of 14.1%). Both periods were characterised by high efficiencies but the heat in the exit gases was not well utilised because of overloading of the boilers and influxes of cold air. The authors conclude that the gas space and blower capacity be increased, burner design improved to provide more turbulence and the automatic control be modified for the new conditions. In Tsvetnyye Metally, 1957, Nr 10, p 68, the partial reconstruction of the furnace was described. There are 4 tables.

Card 2/2

KOZHEVNIKOV, Yu.N., inzh.; SUROVOV, I.I., inzh.

Main directions in the redesign of pipe mills. Stal' 23 no.10:
925-927 0 '63. (MIRA 16:11)

SUROVOV, N. I.

Summer Pasturage Kok-oyrak in Northern T'ien Shan
Uch. zad. Alma-Atin. gos. red. i uchit. in-ta. ser. vest. geog, 4, No. 3,
1953, pp 129-144

The natural landmark Kok-Oyrak, which is used as a summer pasture for cattle, is situated in the upper reaches of the Kebin River (tributary of the Chu River, Keminskiy Rayon, Frunzenskaya Oblast', Kirgiz SSR). In 1944 a total of 31,000 hectares were covered by an itinerant geobotanical exploration. The bottom of the valley is occupied by subalpine herbaceous and grassy meadow steppes. The predominant species are Festuca Ganeschini, Gentiana Kirilovii. The area of the meadow-steppe pasturage in the dzhaylyau (summer pasturage) is 1,082 hectares, and the total food capacity is 12,443 centners. (RZhGeol, No 3, 1955)

SO: Sum. No. 639, 2 Sep 55

KOROBV, I.I., inzh.; SUROVOV, V.I., inzh.; GONCHAROV, P.G., inzh.; ZHAK,
A.M., inzh.

Process of making ferromanganese in the blast furnace. Stal' 21
no.2:107-108 F '61. (MIRA 14:3)

1. Metallurgicheskiy zavod im. Petrovskogo.
(Ferromanganese)

KOROBV, I.I.; SUROVOV, V.I.; KOTOV, K.I.; YEFIMENKO, A.G.

Improvement of the auxiliary blast furnace equipment. Stal' 21
no.5:397-402 Ny '61. (MIRA 14:5)

1. Dnepropetrovskiy zavod im. Petrovskogo.
(Blast furnaces--Equipment and supplies)

SCROLEVA, C.F.

117 V Hydrolysis of pentosans from cotton hulls, sunflower
 hulls, corn husks, and beech sawdust. A. P. SCROLEVA,
 Vys. M. P. (1954), M. U. S. S. R., *Tr. Vsesoyuzn. Nauchn. Ispytatel'sk. Prikl. Khim. Inst.*, No. 4, 1114-1122. (1954)
 hulls (I), sunflower hulls (II), corn husks (III), and beech
 sawdust (IV) were boiled in 0.3% H₂SO₄ solution (the
 ratio of the material to the acid was 1:1), washed,
 dried, and hydrolyzed by boiling in 0.5 and 2.0% H₂SO₄
 solution for 1 hr. at atm. pressure. I, II, III, and IV, resp.,
 contained 20.3, 21.1, 33.6, and 24.8% of easily hydrolyzable
 polysaccharides, of which 20.2, 21.5, 35.9, and 23.2% were
 pentosans; 19.2, 41.0, 12.2, and 19.8% of difficultly hydro-
 lyzable polysaccharides; 5.43, 6.95, 3.91, and 4.80%
 of uronic acids; 3.89, 2.69, 2.41, and 0.87% of proteins.
 II and IV contained about 20% of pentosans that did not
 hydrolyze readily. In III some hexoses dissolved together
 with pentosans. The yields of fermentable sugars were with
 0.5% H₂SO₄ 3.21, 1.25, 4.18, and 1.35%; with 2.0% H₂SO₄,
 13.53, 7.09, 18.59, and 7.14% based on pentosans; 0.5%
 H₂SO₄ gave 25.4, 69.2, 15.2, and 21.2%; and 2.0% H₂SO₄,
 12.5, 19.8, 19.2, and 7.4% of uronic acids. Pentosans in
 III and I hydrolyzed rapidly, but the reaction was slower
 with IV and II. The relative content of uronic acids in the
 hydrolysis of I, was maximum the max. yield of 22-24%,
 has remained the same, but more volatile acids were formed
 on treatment with 2% H₂SO₄. It has been assumed that
 these acids form esters with polyuronides. The time of
 reaction and the concn. of the acid are the main factors in-
 fluencing the rate and degree of hydrolysis. The yield was
 highest with III and the lowest with II in regard to both
 time and strength of the acid. T. Jurcic

3

✓ Diffusion phenomena in the hydrolysis of plant substances. A. P. Zakashchikov, Z. M. Polyagal, and O. F. Sursova. *Gidroliz i Lezokhin. Prom.* 8, No. 8, 1955. (1)

(1955).—Purified corn husks (I), cotton seed hulls (II), and sunflower seed hulls (III) were subjected to hydrolysis in 0.5 and 1.0% H₂SO₄ for 15 and 60 minutes to determine the ratio of the amt. of liquor to the material being hydrolyzed (IV), and the rate of diffusion of sugars from the substance. The hydrolyzed material was filtered in a Buchner funnel. This operation was followed by pressing the filtered material at 250-300 atm., and then boiling twice in distd. water for 30 minutes, and the amt. of sugars detd. After 15 minutes hydrolysis II had 2.79% sugar retained by the material, 0.97% was in the pressed out liquor, and 0.70% in the filtered hydrolyzate. The amt. of sugar in the hydrolyzate rose to 0.96% and in the pressed out liquor to 1.24% after the addnl. 45 minutes boiling, but it was lowered in the pressed material to 1.75%. The rate of hydrolysis was I > II > III. The rate of diffusion has been considered as the determining factor in the removal of sugars, other factors are temp., acid concn., and time. IV could be regulated by making proper changes in acid concn. and time of reaction.

T. Jurecic

(2)

U.S.S.R. Sci. Res. Inst. Hydrolysis & Sulphite-Alcohol Industry

AUTHORS: Fedorov, K.N., Surovova, V.I. SOV/163-58-1-48/53

TITLE: The Recrystallization of Zinc Monocrystals (Rekristallizatsiya tsinkovykh monokristallov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 256 - 259 (USSR)

ABSTRACT: Investigations on the role played by the twin crystals in the recrystallization of zinc monocrystals were carried out. From the investigations carried out it may be seen that the twins in monocrystals of zinc are not the nucleus of the recrystallization; on the other hand the twins may cause a change of the crystal lattice in the crystal nuclei formed. The formation of the new crystal nucleus on the surface of monocrystals is probably caused by the considerable deformation of the crystal lattice. In the deformation of such monocrystals twins occur. The twin crystals in the interior of the monocrystals of zinc, which do not have nuclei of crystallization, point to the fact that the crystals of the twins do not show any concentration of defective places. There are 2 figures and 3 references, 2 of which are Soviet.

Card 1/2

The Recrystallization of Zinc Monocrystals

SOV/163-58-1-48/53

ASSOCIATION: Dnepropetrovskiy institut inzhenerov zheleznodorozhnogo
transporta (Dnepropetrovsk Institute of Railroad Transport
Engineers)

SUBMITTED: October 1, 1957

Card 2/2

DRONOV, S.F.; VASIL'YEVA, K.A.; PANINA, L.I.; KURILENKO, N.K.; SUROVOVA, O.F.

Low-modulus hemicellulose hydrolysis of plant tissues with a pentose hydrolyzate. *Gidroliz. i lesokhim.prom.* 16 no.3:17-19 '63. (MIRA 16:5)

1. Moskovskoye otdeleniye Gosudarstvennogo nauchno-issledovatel'skogo instituta gidroliznoy i sul'fitnospirovoy promyshlennosti (Hydrolysis) (Hemicellulose)

12.8100

AUTHORS:

Fedash, G.M. and Surovova, V.I.
Investigation of Thermo-e.m.f. of Deformed and Undeformed Homogeneous Metals

TITLE:

PERIODICAL:

No.1, pp 20 - 23

TEXT: The authors chose zinc, which has a hexagonal lattice, for this investigation to find the influence of crystalline-graphic-axis orientation and grain size on the behaviour of thermo e.m.f. in deformation and annealing of metals with a non-cubic lattice. V-shaped single crystals 180 mm long and 4 mm in diameter were grown by the Bridgman method. The angle between the base plane and the axis of the crystal in each of the shoulders was directly measured after cleavage of the single crystal along the (0001) base plane. One shoulder in the middle part was deformed by pressure and the specimen was connected to a galvanometer. One junction (boundary of deformed and undeformed parts of specimen) was heated while the second, together with the copper connectors and leads, was immersed

Surovova, V.I.

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E111/E335

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S/126/63/015/001/024/029
E073/E420

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AUTHOR: Fedash, G.M., Surovova, V.I.

TITLE: Influence of Ni and Si on the physical properties of α -iron

PERIODICAL: Fizika metallov i metallovedeniye, v.15, no.1, 1963, 148-150

TEXT: The physical properties of Fe-Ni and Fe-Si alloys containing respectively up to 12 at.% Ni and 10.8 at.% Si are investigated. With increasing concentration of alloying elements, the Hall emf increases and, for equal concentrations, the increase is more rapid for Si than for Ni; the effect on the electric resistance is similar. Under the given test conditions, the increase in the Hall emf cannot be due to the change in magnetization and the ferromagnetic constant since the magnetization remains almost constant for nickel alloys and decreases for silicon alloys. Therefore, the increase in the Hall emf can be due only to the ordinary Hall constant, which is inversely proportional to the concentration of conductivity electrons. This is in agreement with earlier results. It
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E073/E420

Influence of Ni and Si ...

follows therefrom that silicon and nickel reduce the electron density of the ferrite, whereby silicon has a greater effect than nickel. Thermo emf investigations showed that silicon increases the thermo emf more than nickel, whereby the current in all the specimens was in the direction from the alloy to the pure metal. Earlier published results on the dependence of the hardness on the composition of the alloys for the same specimens yielded curves similar to the thermo emf curves. This indicates that hardening caused by the formation of solid solutions is associated with changes in the interatomic interaction, which brings about a drop in the concentration of conductivity electrons. In the case of Fe-Ni alloys, the range of uniformity of the α -solid solution is limited by the appearance of the γ -phase. A strict analogy was not observed for these alloys; whilst the Hall emf changes slightly, the hardness and the thermo emf increase sharply. This is attributed to the fact that in distinction to silicon, nickel reduces the grain size, bringing about an increase in hardness; a change in the grain size can also appreciably affect the

Influence of Ni and Si ...

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E073/E420

thermo emf. There are 3 figures.

ASSOCIATION: Dnepropetrovsk institut inzhenerov zheleznodorozhnogo
transporta (Dnepropetrovsk Institute of Railway
Transportation)

SUBMITTED: March 19, 1962 (initially)
June 25, 1962 (after revision)

Card 3/3

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S/148/61/000/005/003/015
E111/E152

AUTHORS: Shitalov, N.S., Filippov, A.F., and
Surovov, N.M. (Deceased)

TITLE: Investigation of deformability of a chromium--nickel
alloy

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Chernaya metallurgiya, 1961, No.3, pp. 75-84

TEXT: The object of this work was to find the influence of
the melting conditions and quality of charge materials on the
deformability and heat resisting properties of a nichrome-type
alloy (70% Ni 15% Cr). Ingots weighing 6 kg were produced in an
ordinary and a vacuum induction furnace and under nitrogen. The
following variants were tried: I) melting of a fresh charge with
best grades of tungsten, II) as I. but with second-grade tungsten;
III) melting with addition of 50% scrap of the same alloy;
IV) melting of 100% scrap; V) vacuum melting of 100% scrap;
VI) melting of 100% scrap under nitrogen. Cast specimens 30 mm
in diameter and 40 mm high were upset at 50 °C intervals from 950
to 1250 °C. A weight of 100 kg, preheated to 300-350 °C, was
dropped from a height of 3 mm, the impact velocity being 7.3 m/sec.
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Investigation of deformability of..... S/148/61/000/005/003/015
E111/E152

The degree of deformation was regulated with distance pieces. Between impacts the specimens were cooled and examined; the plasticity was taken to be represented by the degree of deformation corresponding to the appearance of the first crack on the side surface. Plasticity for all variants was highest at 1150 °C. The results confirmed that the best temperature for the start and end of forging was 1150-1180 and 1000 °C respectively. Forging tests were effected with a pneumatic hammer (falling weight 230 kg). Specimens were heated in such a way that uniform temperatures were obtained. Temperatures at the start and end of forging were checked with an optical pyrometer. Various dies were tested, the ones adopted being swage dies with diameters decreasing from 40 to 30 to 20 mm in successive strokes. This was followed by the use of a cramp to give a 15-mm diameter rod, final forging being effected with flat dies. Best results were obtained with variants where top-grade tungsten was used, poorer grades giving high oxygen and non-metallic inclusion contents. Regarding the effect of scrap content in the charge, variant IV gave a poorer deformability and the authors recommend up to 50% scrap (up to 100% with vacuum melting). It was found that replacement in the
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Investigation of deformability of.... S/148/61/000/005/003/015
E111/E152 ²³⁹⁹⁰

by internal micro-cracks produced by incorrect forging. No harmful elements (lead, antimony, tin etc.) were detected spectroscopically in heats of any variant, and chemical composition was virtually the same. The general conclusion is that the hot deformability of the chromium-nickel alloy and time to rupture at high temperature depend primarily on the quality of charge materials and on the melting conditions.

There are 6 figures and 3 tables.

ASSOCIATION: Moskovskiy institut stali
(Moscow Steel Institute)

SUBMITTED: January 12, 1961

Card 4/6

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S/148/61/000/007/001/012
E073/E335

AUTHORS: Yelyutin, V.P., Pavlov, Yu.A., Surovoy, Yu.N. and Shulenov, V.I.

TITLE: Electric Conductivity and Thermal Expansion of Vanadium, Molybdenum and Tungsten Oxides

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya. 1961, No. 7, pp. 12 - 17

TEXT: The oxides V_2O_5 , MoO_3 and WO_3 are n-type semiconductors. The electric conductivity of V_2O_5 was investigated by several authors within a very wide range of temperatures (-200 to +1200 °C). One of these authors did not study the temperature range of interest to the authors of this paper, whilst the results of the others might have been influenced by the interaction of the V_2O_5 with crucible material. As far as the authors are aware, data on the electric conductivity of MoO_3 and WO_3 are available only for temperatures below 200 °C. In X

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E073/E335

Electric Conductivity

this paper, specimens for tests were produced from oxides of high purity by pressing and sintering in an oxygen stream.

The applied pressure was 1.5 t/cm^2 . The specimens were sintered at 600°C (V_2O_5), at 700°C (MoO_3) and at 1000°C (WO_3). The

tests have shown that to obtain a stable density and electric conductivity the specimens have to be held at these temperatures for about 6 hours. The electric resistance of these specimens was measured on a potentiometric instrument consisting of a potentiometer, a mirror galvanometer and a DC source. The measurements were made at elevated temperatures by means of apparatus, a sketch of which is shown in Fig. 1 (1 - test specimen; 2 - thermocouple; 3 - heater; 4 - stainless-steel container; 5 - lid; 6 - stress-bearing current leads; 7 - clamping arrangement; 8 - pressure-current leads). The results have shown that the plots - reciprocal of the temperature versus logarithm of the specific conductivity - have a pronounced bend located somewhat lower than the observed temperatures of the beginning of reduction of these oxides with carbon.

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E073/E335

Electric Conductivity

Figs. 2, 3a and 3b show the dependence of the electric conductivity on the temperature and the reciprocal of the temperature $10^4/T$ for V_2O_5 , MoO_3 and WO_3 respectively.

In Fig. 3 Curves 1 apply to the heating and Curves 2 to the cooling process. The bends were observed at about $380^\circ C$ for V_2O_5 , at about $460^\circ C$ for MoO_3 and at about $700 - 725^\circ C$ for WO_3 . The temperatures of the beginning of interaction of these oxides with carbon are, respectively, 438 , 475 and $782^\circ C$. Thus, at temperatures at which the reduction with carbon begins, a physical transformation occurs, which is accompanied by a slowing-down in the increase of the electric conductivity with temperature. From the point of view of the semiconductor properties, this corresponds probably to a transition from impurity- to intrinsic-conductivity of the oxides.

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Electric Conductivity

In a special series of experiments with specimens consisting of V_2O_5 and finely-ground graphite, pressed and sintered for 6 hours at $250^\circ C$ it was found that the electric resistance increased monotonously at all temperatures with increasing holding time. On the other hand, the electric resistance of pressed graphite powder was found to drop on heating to $300^\circ C$ and remained constant on further heating. This behaviour of oxide-plus-graphite specimens is attributed to interaction between them accompanied by the formation of CO - CO_2 .

The carbon consumption of the reduction reaction leads to a decrease in the electric conductivity of the specimen since the conductivity is basically determined by the electric conductivity of the graphite. It follows therefrom that the speed of change of the electric resistance at various temperatures can serve as a characteristic of the speed of the process of reduction of the oxide by the carbon. Fig. 5 shows the dependence of the speed of change with time of the electric resistance ($\Delta R/\Delta t$ in Ω/min) as a function of the temperature ($^\circ C$) of the V_2O_5 plus C specimens. a sharp increase was

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Electric Conductivity

observed at about 380 °C. The conclusion drawn is that the beginning of appreciable reduction of the oxides coincides with the transition from impurity- to intrinsic-type conductivity. The results of dilatometric measurements on V_2O_5 , MoO_3 and WO_3 specimens, for heating and cooling rates of 150, 200 and 250 °C/h, respectively, are plotted in Fig. 6 [V_2O_5 , MoO_3 (Fig. 6a), WO_3 (Fig. 6b)], (change in length, μ versus temperature, °C).

The temperature was measured with an accuracy of ± 10 °C and the length with an accuracy of 0.5 μ . Thermal expansion occurs up to 350, 440 and 680 °C, respectively. From these temperatures upwards, which correspond approximately to the bends in the temperature-electric conductivity curves, contraction of the specimens was observed. This contraction is attributed to polymorphous transformation or to plastic deformation caused by the measuring equipment as a result of the sharp drop in strength of the oxide at this temperature. It is concluded that at the temperature of the beginning of the reduction process, a change is observed in the physical properties, which is accompanied
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E073/E335

Electric Conductivity

by a sharp decrease in the strength of the sintered specimens and by a slowing-down of the drop in the electrical resistance during heating. The beginning of the intensive chemical interaction corresponds with the transition from impurity- to intrinsic-type conductivity.

There are 6 figures and 9 references: 8 Soviet and 1 non-Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: January 25, 1961

Card 6/9

EWG(j)/EWP(c)/EWT(n)/EPT(c)/EKP(i)/EPT(n)-2/EWG(n)/EPR/EWP(j)/E/

Pe-4/PI-4/Pe-4 ISP(c)/RPL JD/WN/JW/JG/AT/RH/MI
CO./0951/0953

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5/1
B

AUTHORS: Suravoy, Yu. A.; Alexseyev, V. I.; Shvartsman, D. A.

TITLE: The thermodynamics of complex $(Fe_xMo_y)_2C$ carbides

SOURCE: AN SSSR, Doklady, v. 57, no. 4, 1964, 951-953

TOPIC TAGS: complex iron molybdenum carbide, $(Fe_xMo_y)_2C$, thermodynamics, relative partial free energy, heat content, entropy, $(Fe_{0.02}Mo_{0.98})_2C$, $(Fe_{0.036}Mo_{0.964})_2C$, $(Fe_{0.05}Mo_{0.95})_2C$, carbon transition

ABSTRACT: The thermodynamics of $(Fe_xMo_y)_2C$ were investigated by determining the equilibrium between the carbides and gaseous mixtures of hydrogen and methane: $C(\text{in carbide}) + 2H_2(g) \rightleftharpoons CH_4(g)$. The carbides were synthesized by heating pressed mixtures of the iron and molybdenum and lamp black under vacuum at 1400C for 10 hours by the method described earlier by Alexseyev and Shvartsman (DAN, 195, no. 6, 1952 (1950)). X-ray analysis showed the 3 samples had an Mo_2C structure. Expressions were derived for the relative partial free energies of the carbon

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in the carbides ($\Delta G_C = \bar{G}_C - G_{\text{graphite}} = RT \ln a_C$), where a_C is the activity of the carbon in the carbides with reference to graphite, $a_C = r/r^*$; $r = P_{\text{CH}_4}/P_{\text{H}_2}$ was determined experimentally, and r^* , the equilibrium of $\text{CH}_4 - \text{H}_2$ gas mixtures with pure graphite, was obtained from the literature. For $(\text{Fe}_{0.02}\text{Mo}_{0.98})_2\text{C}$, $\Delta G_C = -2360 - 9.66T(873-1123\text{K})$; for $(\text{Fe}_{0.03}\text{Mo}_{0.97})_2\text{C}$, $\Delta G_C = -2610 - 9.56T(873-1123\text{K})$ and for $(\text{Fe}_{0.05}\text{Mo}_{0.95})_2\text{C}$, $\Delta G_C = -3090 - 9.10T(873-1123\text{K})$. The first term in these equations represents the relative partial heat content of carbon, ΔH_C , and the coefficient of temperature represents the relative partial entropy ΔS_C in the given temperature interval. Increasing the iron content in these complex iron-molybdenum carbides changed the thermodynamic properties of the carbon. Increasing the iron increased the exothermic nature of the reaction of the carbon from graphite to carbide; the entropy of the carbon in the carbide is reduced. Analogous effects of iron were observed in $(\text{Fe}_x\text{Cr}_y)_2\text{C}$ type carbides. No explanation for these unexpected results is given.

Core 2/3

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ACCESSION NR: AP4043553

Orig. art. has: 2 tables and 9 equations.

ASSOCIATION: Institut metallov yedeniya i fiziki metallov Tsentral'-
nogo nauchno-issledovatel'skogo instituta chernoy metallurgii im.
I.P. Bardina (Institute of Physical Metallurgy and Physics of Metals,
Central Scientific Research Institute of Ferrous Metallurgy)

SUBMITTED: 29 Feb 64

ENCL: 00

SUB CODE: TD, GC, IC

NR REF SOV: 001

OTHER: 001

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Card 3/3

L 1353-66 EWT(m)/EPP(c)/EWP(t)/EWP(b) IJP(o) JD

ACCESSION NR: AP5021936

UR/0126/65/020/002/0251/0257
65.017/019

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B

AUTHOR: Surovoy, Yu. N.; Shvertsman, L. A.; Aleksayev, V. I.

TITLE: Nature of chemical bonding in the carbides and nitrides of transition metals

SOURCE: *Fizika metallov i metallovedeniye*, v. 20, no. 2, 1965, 251-257

TOPIC TAGS: chemical bonding, transition metal carbide, transition metal nitride, valence electron, heat of atomization, bonding electron, bonding orbit, internal electron

ABSTRACT: On the basis of the theory that, during the formation of the metalloid compound, the valence electrons of the atoms of both components migrate to the d-level of the metal atoms, relations are derived between the heats of atomization of the carbides and nitrides of Ti and Cr and the effective charges of the atomic nuclei. Thus, it is concluded that chemical bonding in the carbides and nitrides of the transition metals is based on the d-band of the transition metals, which accepts the p-electrons of carbon or nitrogen. This bonding may to a large extent

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have the properties of a metallic bonding but at the same time it is distinguished by the property of saturability: along with the bonding orbits, if the number of electrons in the compound exceeds a certain level, there appear orbits which weaken the bonding. The presence of bonding orbits conditions a definite proportion of covalence and the attendant properties: hardness, chemical inertia, etc. The strength of bonding, given an equal number of electrons, is determined by the electrostatic interaction between d-, s-, and p-electrons and the nuclei of the metal and metalloid, on taking into account the shielding effect of the internal electrons; the weaker this electrostatic attraction is, the stronger is the bonding in the compound. The strongest bonding in the carbides, nitrides, and borides of the transition metals is observed in cases where there are 5.5-6.5 electrons per metal atom; it is exactly in these cases that the melting points of such compounds are the highest (upward of 2600°C) and they are the most heat-resistant. This is exemplified by the case of titanium carbide: The electronic structure of Ti is $3d^2 4s^2$ (beyond the argon shell), and that of C, $1s^2 2s^2 2p^2$. Total number of bonding electrons: two 3d- and two 4s-electrons from Ti, minus 0.5 electron departing for the conductivity band, plus two 2p-electrons from C. Thus, the sum total of the electrons considered is 5.5. Orig. art. has:

Card 2/3

L 1353-66

ACCESSION NR: AP5021936

1 table.

ASSOCIATION: TsNICHENET in. I. P. Bardina 55

SUBMITTED: 13Jul64

ENCL: 00

SUB CODE: NP, MM

NO REF BOV: 008

OTHER: 007

Card *dy* 3/30

SUROVOY, Yu.N.; ALEKSEYEV, V.I.; SHVARTSMAN, L.A.

Effect of iron on the thermodynamic activity of carbon in complex carbides of the $(Fe_xMo_y)_2C$ type. Izv. AN SSSR. Neorg. mat. 1 no.10:1816-1821 0 '65.

(MIRA 18:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina. Submitted July 5, 1965.

ALEKSEYEV, V.I.; SUROVOY, Yu.N.

Method for studying the thermodynamic properties of alloys.
Zav. lab. 31 no.11:1356-1358 '65. (MIRA 19:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy
metallurgii imeni Bardina.

SUROVTSEV, B.P., assistant

Studying seepage problems of one of the projected hydroelectric power stations. Trudy TIIIMSKH no.1:141-150 '55. (MIRA 15:4)

1. Kafedra gidrosocuzheniy Tashkentskogo instituta inzhenerov irrigatsii i mekhanizatsii sel'skogo khozyaystva.
(Hydroelectric power stations) (Seepage)

SECRET R D

... through

... in various ...

... 21, 1958

... 1957

... of ...

... empirical formula for calculation of homogeneous

... The calculation is based on "the specific resistance"

... of the ... $R = \rho / L = \Delta V / I$, where ρ is the product of

SUROVTSEV, B.P.

Calculation of seepage in earth dams with a permeable
facing, upstream floor of the apron, and cutoff wall.
Trudy TIIIMSKH no.8:122-130 '57. (MIRA 15:5)
(Dams) (Seepage)

BYKOV, V.T.; SUROVISEV, G.G.; TKACHENKO, Ye.A.

Electron microscope investigation of bleaching clays from the deposits of Western Siberia. Izv. SO AN SSSR no.3 Ser. khim. nauk no.1:161-162 '63. (MIRA 16:8)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR, Vladivostok.

(Siberia, Western—Clay) (Electron microscopy)

SUROVTSEV, G.G.

Brief geological characteristics of main deposits of the
natural sorbents of Siberia. Trudy DVFAN SSSR.Ser.khim.
no.7:5-17 '65. (MIRA 18:12)

SURCHISEV, G.G.; TRACHENKO, Ye.A.

Electron microscope study of oriented preparations of clay minerals.
Zav.lab. 29 no.8:965-966 '63. (MIRA 16:9)
(Clay) (Electron microscopy)

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AUTHORS:

Lakotlev, V.V., Filippov, B.I.,
Arzent'yev, P.P., Buravtsev, G.S.

SOV/163-58-4-3/47

TITLE:

Intensification of the Steel Melting Processes Under the Influence of the Jet of the Oxidizing Agent (Intensifikatsiya staleplavil'nykh protsessov pri vozdeystvii strui okislitelya)

PERIODICAL:

Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 4,
pp 17 - 22 (USSR)

ABSTRACT:

The conditions for a rational air-blast supply into the metal furnace are experimentally investigated by considering, firstly, utilization of the possibilities offered by blast oxidation and, secondly, regulation of both sequence and speeds in the oxidation of the admixtures contained in the metal smelt. In the smelting tests the influence of the main factors named in the following on the order and on the speed of oxidation of the admixtures to pig-iron was examined: 1) Intensity of feeding the bath with oxygen (supplying speed of the oxidizing agent and its composition), 2.) method of feeding the oxidizing agent into the bath (refining of molten metal or blasting of the oxidizing agent at the surface). In the course of analyzing primary data a series of relations was

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obtained, a part of which will be studied here. The data obtained clearly show the effect of temperature on the speed of carbon oxidation in the melt and confirm the supposition, expressed at an earlier date (Ref 2), of the existence of a temperature threshold at decarburization. - At the same time, it is stated that the conditions of feeding the bath with oxygen may somewhat change the influence of the temperature. In the case of weakly oxidizing puddling, the influence exercised by the critical temperature is less marked and increases noticeably with an increase of the oxygen concentration in the fan blast. By intensifying the air blast supply a noticeable increase of the decarburization speed at a mean temperature of the bath of somewhat below 1500° is observed. The testing of a combined supply of the oxidizing agent to the bath while simultaneously blasting and injecting the oxidizing agent into the metal proved to be very interesting. By one jet a 100 % oxygen and by another jet a mixture of 50 % oxygen and 50 % carbon dioxide was injected. The jets lead into the interior and onto the surface of the metal changed place in the 1st and the 3rd melt section. Of the two variants: 1) refining with 100 % oxygen and blasting with a

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mixture of 50 % O_2 + 50 % CO_2 , and 2) refining with 50 % O_2 + 50 % CO_2 , blasting with 100 % oxygen, the latter proved to be more effective. This means that the use of a more intense oxidizing agent for blasting the bath, ensuring higher absolute speeds for the oxidation of the elements, was more effectful. The employment of combined blasting, at both variants, lead to an intensification of the processes of oxidizing the admixtures of molten metal. There are 6 figures and 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy institut stali (Moscow Steel Institute)

SUBMITTED: June 14, 1958

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FILIPPOV, S.I.; ARYSTYNBAYEV, T.Zh.; SUROVTSEV, G.S.

Oxidizing steel smelting processes in a laboratory rotary
furnace. Izv. vys. ucheb. zav.; chern. met. no.2:10-14 '60.
(MIRA 15:5)

1. Moskovskiy institut stali.
(Rotary hearth furnaces--Testing)
(Steel--Metallurgy)

SUROVTSEV, I.F.

(Ivan Fedorovich)

"Investigation of the Working Processes of the Machinery and Stack of a Steam Locomotive," (Dissertation), Academic degree of Doctor in Technical Sciences, based on his defense, 7 December 1953, in the Council of the Moscow Order of Labor Red Banner Higher Technical School im. Bauman.

•-M-3,054,778, 2 Oct 57

SUROVTSEV, I.F., doktor tekhnicheskikh nauk, professor.

Investigation of steam engine performance. [Trudy] MVTU no.43:
24-49 '55. (MLBA 9:8)

(Steam engines)

SUROVTSEV, I.F., doktor tekhnicheskikh nauk, professor.

Investigation of the performance of locomotive cone exhausts.
[Trudy] MVTU no.43:50-84 '55. (MLRA 9:8)
(Locomotives--Exhaust)

8/187/59/000/04/020/020
8031/641

AUTHOR: Zolotarev, V. E.
TITLE: The Scientific-Technical Conference at MAI, May
Aviation Institute
PERIODICAL: Investivye vreshnykh svedeniya, Aviatstroyeniya
tekhnika, 1959, No. 4, pp 161-185 (USSR)
ABSTRACT: In May 1959, the 16th Conference of Professorial and
Teaching Staff took place.

Mathematical and Mechanics Section. The following papers
were read: "A Spectral Solution of the Problem of the Theory
of Asymmetric Turbulence" by Candidate of Physical
and Mathematical Sciences G. M. Yanovskiy; "Physical
Evaluations for Functions with Positive Real Part" by
Assistant G. S. Zhuk; "Existence, Uniqueness and
Convergence Theorem for Mixed Systems of Functional
Equations" by Decent, Candidate of Physical and
Mathematical Sciences M. N. Tikhov; "On the Application
of Bell and Chebyshev Polynomials to the Solution of Some
Problems in the Synthesis of Four Bar Linkages" by
Decent, Candidate of Physical and Mathematical Sciences
V. A. Kuznetsov; "The Influence of the Structural
Parameters of a Link on the Convergence of the
Solvers of their Computerized Kinematical Problems" by
Decent, Candidate of Physical and Mathematical Sciences
E. I. Galitskiy.
Manufacturing Section. The following papers were
read: "The Relation Between the Complex Length of Waves,
the Length of de Broglie Waves and the Acceleration
Potential for High Energy Particles" by Decent,
Candidate of Physical and Mathematical Sciences
I. M. Buzik; "The Problem of Determining the Real
Transfer Coefficient of Conductors" by Senior Instructor
V. A. Zhurav; "An Electro-Graphical Method of
Investigating the Structure of Matter" by Assistant
M. V. Kuznetsov; "On the Results of the Work
of the Commission of the USSR Academy of Sciences
Decent, Candidate of Physical and Mathematical Sciences
E. I. Galitskiy; "On the Problem of the
Electrical and Radio Technical Systems of the
Passage of Trajectories in an Electric Drive with
Controlling Errors" by Decent, Candidate of Technical
Sciences M. M. Parul'manov; "The Experimental Determination
of the Resonance in Synchronous Machines" by Senior
Instructor M. Y. Khas'inskiy; "An Experimental Method
of Investigating Electric Fields" by Assistant
V. A. Kuznetsov; "A Discrete Transformer of Current into
Voltage" by Decent, Candidate of Physical and
Mathematical Sciences V. A. Kuznetsov; "The
Application of Technical Sciences in Aviation"
by Decent, Candidate of Physical and Mathematical Sciences
I. P. Artamonov; "The Adaptation of a Thermobaric Chamber to the
Simulation of the Sinking of a Mine Shaft in Oil and
Certain Results of Investigations to Determine the
Mechanical Characteristics of Sand at Different
Temperatures and Humidities" by Decent, Candidate of
Technical Sciences M. Y. Bilyashenko; "Frication and
Separation in Corrosion" by Decent, Candidate of Technical
Sciences G. I. Baidaryev; "The Construction of Multi-
Satellite Launching Systems" by Assistant V. A. Baidaryev;
"The Influence of the Parameters of the Fatigue of
Threaded Connections on the Reliability of the
Investigation of Corrosion" by Assistant V. A. Baidaryev;
A. S. Efova.

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PIRES, B.Ya.; SUROVTSEV, I.Ya.

Determination of the dispersity and microdislocations of crystal lattices based on data of harmonic analysis of the shape of radiograph lines. Kristallografiia 8 no.3:489-493 My-Je '63.

(MIRA 16:11)

1. Khar'kovskiy gosudarstvennyy universitet imeni Gor'kogo.

YEPIFANTSEV, K.F., inzh.; SUROVTSEV, L.A., inzh, RAPAL', Ya.G., inzh.

Construction of the Yanovskiy hydraulic mine. Shakht. stroi. 4
no.12:18-22 D '60. (MIRA 13:12)

1. Kombinat Donbassantratsitshakhtostroy.
(Donets Basin--Hydraulic mining)

YEPIFANTSEV, K.F., inzh.; SUROVTSEV, L.A., inzh.; RAFAL', Ya. G., inzh.

Reducing the time needed for lining vertical shafts. Shakht.
stroi. 5 no.6:12-15 Je '61. (MIRA 14:6)

1. Kombinat Donbassantratsi'shakhtostroy.
(Shaft sinking)

ALEKSEYEV, V.; KONRADS, Ya., Geroy Sotsialisticheskogo Truda, master;
SUROVTSEV, N.

The best builders. Stroitel' no.4:12 Ap '59. (MIRA 12:6)

1.Spetsializirovannoye upravleniye otdelochnykh rabot tresta Rigastroy.
(Building)